

February 16, 2011

Analytical Report for Service Request No: K1100772

Al Deichsel  
Georgia Pacific Corporation  
92326 Taylorville Road  
Clatskanie, OR 97016

**RE: Wauna Priority Pollutants**

Dear Al:

Enclosed are the results of the samples submitted to our laboratory on January 28, 2011. For your reference, these analyses have been assigned our service request number K1100772.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.caslab.com](http://www.caslab.com). All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3358. You may also contact me via Email at [LHuckestein@caslab.com](mailto:LHuckestein@caslab.com).

Respectfully submitted,

**Columbia Analytical Services, Inc.**

Lynda Huckestein  
Client Services Manager

LH/dlm

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value that was detected outside the quantitation range.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H In accordance with the 2007 EPA Methods Update Rule published in the Federal Register, the holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value that was detected outside the quantitation range.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value that was detected outside the quantitation range.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.



RCOC #1 03/10

**Columbia Analytical Services, Inc.**  
Cooler Receipt and Preservation Form

PC Lynda

Client / Project: Cap Wanauna Service Request K11 00772

Received: 01/28/11 Opened: 01/28/11 By: Lee Unloaded: 28/11 By: SJ

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? \_\_\_\_\_
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Cooler Temp °C	Temp Blank °C	Thermometer ID	Cooler/COC ID	NA	Tracking Number	NA	Filed
2.1°C	2.8	smo-306	N/A		N/A		

7. Packing material used. Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other \_\_\_\_\_
8. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
11. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
12. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
13. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
14. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
15. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp.	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

**SHORT HOLD TIME**

Notes, Discrepancies, & Resolutions: \_\_\_\_\_

No pH ✓ due to sample matrix



# COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

**Client:** Georgia-Pacific Consumer Products LP  
**Project:** Wauna Priority Pollutants  
**Sample Matrix:** Water

**Service Request:** K1100772  
**Date Collected:** 1/26/11  
**Date Received:** 1/28/11

**Prep Method:** Method  
**Analysis Method:** 335.4

**Units:** mg/L  
**Basis:** NA

### Cyanide, Total

Sample Name	Lab Code	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Final Effluent CN Composite	K1100772-005	ND U	0.010	1	2/ 3/11	2/4/11 16:00	
Method Blank	K1100772-MB	ND U	0.010	1	2/ 3/11	2/4/11 16:00	

# COLUMBIA ANALYTICAL SERVICES, INC.

## Analytical Report

**Client:** Georgia-Pacific Consumer Products LP  
**Project:** Wauna Priority Pollutants  
**Sample Matrix:** Water

**Service Request:** K1100772  
**Date Collected:** 1/27/11  
**Date Received:** 1/28/11

**Prep Method:** Method  
**Analysis Method:** 420.1

**Units:** mg/L  
**Basis:** NA

### Phenolics, Total

Sample Name	Lab Code	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Final Effluent	K1100772-006	0.156		0.010	1	2/ 4/11	2/4/11 17:27	
Method Blank	K1100772-MB	ND	U	0.010	1	2/ 4/11	2/4/11 17:27	

# Columbia Analytical Services

## - Cover Page - INORGANIC ANALYSIS DATA PACKAGE

Client: Georgia-Pacific Consumer Products LP  
Project Name: Wauna Priority Pollutants  
Project No.:

Service Request: K1100772

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Sample Name:

Final Effluent

Final Effluent

Method Blank

Lab Code:

K1100772-006

K1100772-006DISS

K1100772-MB

Comments:

Approved By: SC

Date: 2/16/11



**Metals****- 1 -****INORGANIC ANALYSIS DATA PACKAGE**

Client: Georgia-Pacific Consumer Product      Service Request: K1100772  
Project No.: NA      Date Collected: 01/27/11  
Project Name: Wauna Priority Pollutants      Date Received: 01/28/11  
Matrix: WATER      Units: ug/L  
Basis: NA

Sample Name: Final Effluent      Lab Code: K1100772-006

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.8	4.0	1.0	02/14/11	02/15/11	396		
Arsenic	200.8	1.0	1.0	02/14/11	02/15/11	1.0	U	
Beryllium	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Cadmium	200.8	0.04	1.0	02/14/11	02/15/11	0.07		
Chromium	200.8	0.4	1.0	02/14/11	02/15/11	1.8		
Copper	200.8	0.2	1.0	02/14/11	02/15/11	2.4		
Lead	200.8	0.04	1.0	02/14/11	02/15/11	0.46		
Mercury	245.1	0.2	1.0	02/04/11	02/07/11	0.2	U	
Nickel	200.8	0.4	1.0	02/14/11	02/15/11	1.4		
Selenium	200.8	2.0	1.0	02/14/11	02/15/11	2.0	U	
Silver	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Thallium	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Tin	200.8	0.2	1.0	02/14/11	02/15/11	1.1		
Zinc	200.8	1.0	1.0	02/14/11	02/15/11	34.1		

% Solids: 0.0

Comments:

## Columbia Analytical Services

### Metals

- 1 -

#### INORGANIC ANALYSIS DATA PACKAGE

Client: Georgia-Pacific Consumer Product      Service Request: K1100772  
Project No.: NA      Date Collected: 01/27/11  
Project Name: Wauna Priority Pollutants      Date Received: 01/28/11  
Matrix: WATER      Units: ug/L  
Basis: NA

Sample Name: Final Effluent

Lab Code: K1100772-006DISS

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	200.8	1.0	1.0	02/14/11	02/15/11	1.0	U	
Beryllium	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Cadmium	200.8	0.04	1.0	02/14/11	02/15/11	0.06		
Chromium	200.8	0.4	1.0	02/14/11	02/15/11	1.6		
Copper	200.8	0.2	1.0	02/14/11	02/15/11	2.2		
Lead	200.8	0.04	1.0	02/14/11	02/15/11	0.39		
Mercury	245.1	0.2	1.0	02/04/11	02/07/11	0.2	U	
Nickel	200.8	0.4	1.0	02/14/11	02/15/11	1.2		
Silver	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Thallium	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Tin	200.8	0.2	1.0	02/14/11	02/15/11	1.5		
Zinc	200.8	1.0	1.0	02/14/11	02/15/11	15.7		

% Solids: 0.0

Comments:

## Columbia Analytical Services

### Metals

- 1 -

#### INORGANIC ANALYSIS DATA PACKAGE

Client: Georgia-Pacific Consumer Product      Service Request: K1100772  
Project No.: NA      Date Collected:  
Project Name: Wauna Priority Pollutants      Date Received:  
Matrix: WATER      Units: ug/L  
Basis: NA

Sample Name: Method Blank

Lab Code: K1100772-MB

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.8	2.0	1.0	02/14/11	02/15/11	2.0	U	
Arsenic	200.8	0.5	1.0	02/14/11	02/15/11	0.5	U	
Beryllium	200.8	0.02	1.0	02/14/11	02/15/11	0.02	U	
Cadmium	200.8	0.02	1.0	02/14/11	02/15/11	0.02	U	
Chromium	200.8	0.2	1.0	02/14/11	02/15/11	0.2	U	
Copper	200.8	0.1	1.0	02/14/11	02/15/11	0.1	U	
Lead	200.8	0.02	1.0	02/14/11	02/15/11	0.02	U	
Mercury	245.1	0.2	1.0	02/04/11	02/07/11	0.2	U	
Nickel	200.8	0.2	1.0	02/14/11	02/15/11	0.2	U	
Selenium	200.8	1.0	1.0	02/14/11	02/15/11	1.0	U	
Silver	200.8	0.02	1.0	02/14/11	02/15/11	0.02	U	
Thallium	200.8	0.02	1.0	02/14/11	02/15/11	0.02	U	
Tin	200.8	0.1	1.0	02/14/11	02/15/11	0.1	U	
Zinc	200.8	0.5	1.0	02/14/11	02/15/11	0.5	U	

% Solids: 0.0

Comments:

February 23, 2011

Analytical Report for Service Request No: K1100772

Al Deichsel  
Georgia Pacific Corporation  
92326 Taylorville Road  
Clatskanie, OR 97016

**RE: Wauna Priority Pollutants**

Dear Al:

Enclosed are the additional results for the samples submitted to our laboratory on January 28, 2011. For your reference, these analyses have been assigned our service request number K1100772.

The result for Antimony was added to the report as requested,

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.caslab.com](http://www.caslab.com). All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3358. You may also contact me via Email at [LHuckestein@caslab.com](mailto:LHuckestein@caslab.com).

Respectfully submitted,

**Columbia Analytical Services, Inc.**



Lynda Huckestein  
Client Services Manager

LH/lb

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# Columbia Analytical Services

## Metals

- 1 -

### INORGANIC ANALYSIS DATA PACKAGE

Client: Georgia-Pacific Consumer Product Service Request: K1100772  
Project No.: NA Date Collected: 01/27/11  
Project Name: Wauna Priority Pollutants Date Received: 01/28/11  
Matrix: WATER Units: ug/L  
Basis: NA

Sample Name: Final Effluent Lab Code: K1100772-006

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.8	4.0	1.0	02/14/11	02/15/11	396		
Antimony	200.8	0.10	1.0	02/14/11	02/15/11	0.26		
Arsenic	200.8	1.0	1.0	02/14/11	02/15/11	1.0	U	
Beryllium	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Cadmium	200.8	0.04	1.0	02/14/11	02/15/11	0.07		
Chromium	200.8	0.4	1.0	02/14/11	02/15/11	1.8		
Copper	200.8	0.2	1.0	02/14/11	02/15/11	2.4		
Lead	200.8	0.04	1.0	02/14/11	02/15/11	0.46		
Mercury	245.1	0.2	1.0	02/04/11	02/07/11	0.2	U	
Nickel	200.8	0.4	1.0	02/14/11	02/15/11	1.4		
Selenium	200.8	2.0	1.0	02/14/11	02/15/11	2.0	U	
Silver	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Thallium	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Tin	200.8	0.2	1.0	02/14/11	02/15/11	1.1		
Zinc	200.8	1.0	1.0	02/14/11	02/15/11	34.1		

Comments:

*Columbia Analytical Services*

**Metals**

- 1 -

**INORGANIC ANALYSIS DATA PACKAGE**

Client: Georgia-Pacific Consumer Product      Service Request: K1100772  
Project No.: NA      Date Collected: 01/27/11  
Project Name: Wauna Priority Pollutants      Date Received: 01/28/11  
Matrix: WATER      Units: ug/L  
Basis: NA

Sample Name: Final Effluent      Lab Code: K1100772-006DISS

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	200.8	0.10	1.0	02/14/11	02/15/11	0.28		
Arsenic	200.8	1.0	1.0	02/14/11	02/15/11	1.0	U	
Beryllium	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Cadmium	200.8	0.04	1.0	02/14/11	02/15/11	0.06		
Chromium	200.8	0.4	1.0	02/14/11	02/15/11	1.6		
Copper	200.8	0.2	1.0	02/14/11	02/15/11	2.2		
Lead	200.8	0.04	1.0	02/14/11	02/15/11	0.39		
Mercury	245.1	0.2	1.0	02/04/11	02/07/11	0.2	U	
Nickel	200.8	0.4	1.0	02/14/11	02/15/11	1.2		
Silver	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Thallium	200.8	0.04	1.0	02/14/11	02/15/11	0.04	U	
Tin	200.8	0.2	1.0	02/14/11	02/15/11	1.5		
Zinc	200.8	1.0	1.0	02/14/11	02/15/11	15.7		

Comments:

# Columbia Analytical Services

## Metals

- 1 -

### INORGANIC ANALYSIS DATA PACKAGE

Client: Georgia-Pacific Consumer Product Service Request: K1100772  
Project No.: NA Date Collected:  
Project Name: Wauna Priority Pollutants Date Received:  
Matrix: WATER Units: ug/L  
Basis: NA

Sample Name: Method Blank Lab Code: K1100772-MB

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.8	2.0	1.0	02/14/11	02/15/11	2.0	U	
Antimony	200.8	0.05	1.0	02/14/11	02/15/11	0.05	U	
Arsenic	200.8	0.5	1.0	02/14/11	02/15/11	0.5	U	
Beryllium	200.8	0.02	1.0	02/14/11	02/15/11	0.02	U	
Cadmium	200.8	0.02	1.0	02/14/11	02/15/11	0.02	U	
Chromium	200.8	0.2	1.0	02/14/11	02/15/11	0.2	U	
Copper	200.8	0.1	1.0	02/14/11	02/15/11	0.1	U	
Lead	200.8	0.02	1.0	02/14/11	02/15/11	0.02	U	
Mercury	245.1	0.2	1.0	02/04/11	02/07/11	0.2	U	
Nickel	200.8	0.2	1.0	02/14/11	02/15/11	0.2	U	
Selenium	200.8	1.0	1.0	02/14/11	02/15/11	1.0	U	
Silver	200.8	0.02	1.0	02/14/11	02/15/11	0.02	U	
Thallium	200.8	0.02	1.0	02/14/11	02/15/11	0.02	U	
Tin	200.8	0.1	1.0	02/14/11	02/15/11	0.1	U	
Zinc	200.8	0.5	1.0	02/14/11	02/15/11	0.5	U	

Comments: